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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/987,370	11/14/2001	Robert T. Foster	031993-129	6927

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EXAMINER	
HARTLEY, MICHAEL G	
ART UNIT	**PAPER NUMBER**
1616	6

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N . 09/987,370	Applicant(s) FOSTER ET AL.	
	Examiner Michael G. Hartley	Art Unit 1616	

-- The MAILING DATE f this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *29-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *29-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Resp nse to Amendment

The preliminary amendments filed 11/14/2001 have been entered. The specification has been amended to insert the continuing data. Claims 1-28 have been canceled and new claims 29-44 have been added.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 29-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 29, the recitation of the last three lines in unclear for the following reasons: the last line specifies that "at least one of R^1 and R^2 together contains a D-atom;" however, above in the claim R^2 is defined as CH_3 without a recitation that an H-atom therein can be replaced with a D-atom. The claim only specifies that an H atom may be replaced with a D-atom in the R^1 methyl groups. Also, the claim states that "at most 5 out of a total 6H groups may be replaced with a D atom" and this also signifies that only the R^1 H atoms can be replaced with D-atoms (e.g., otherwise there would be a total of 12 H atoms, not 6). It is suggested that "and R^2 together" is deleted from the last line of claim 29 to clarify.

The dependent claims fall therewith.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 35-44 are rejected under 35 U.S.C. 102(a) as being anticipated by Rampe, (Eur. J. Med. Chem, 1993).

Rampe discloses deuterated nifedipine wherein one or more hydrogens of one or both of the methyl groups in the 2 and 6 positions are replaced with deuterium atoms, see page 261, compounds 2c and 2d, which includes where all hydrogens in the 2 and 6 positions are replaced with deuterium. The deuterated compounds are for methods of lowering blood pressure (e.g., treating hypertension) by blocking calcium channels, see abstract and introduction of page 259, as well as, pages 261 and 263. The methods of using deuterated analogues of nifedipine are to enhance efficacy by extending duration, decreasing the dosage (e.g., increasing potency), etc., see introduction page 259. Also, the methods of deuterating nifedipine are within the scope of the instantly claimed methods, since it is noted that the only step present in the above method claims is replacing hydrogen at the 2 or 6 position methyl with deuterium, and such is clearly the step performed by Rampe. Thus, Rampe inherently discloses the method as claimed, since exactly all the steps as claimed are performed by Rampe.

Claim Rejections - 35 USC § 103

Claims 29-30, 32, 33 and 35-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rampe, (Eur. J. Med. Chem, 1993) in view of Funaki, (Biochem. Pharm., 1989) in further view of Liepins (USP 5,223,269).

Rampe discloses deuterated nifedipine compositions (and methods) as set forth above.

Rampe fails to disclose methods using deuterated compounds having the same exact deuterium substituted positions as encompassed by the instant claims, namely that, only 5 of 6 H atoms at the 2 and 6 positions are replaced with D atoms.

Funaki discloses deuterated nifedipine and teaches that the deuterium may be at positions other than the 2 and 6 methyl groups of the nifedipine compound, see pages 4213-4214. Funaki teaches that nifedipine is used for methods of treating hypertension and for blocking calcium channels, see page 4213, first full paragraph.

Liepins discloses methods of blocking calcium channels and treating hypertension comprising administering compounds which are deuterium-substituted, see columns 3-4. Liepins teaches methods

wherein antihypertensive agents, (e.g., calcium blocking compounds), are deuterium-substituted to provide the advantage of enhancing the therapeutic effects of the antihypertensive agent, see column 4, lines 41+ and column 6, lines 48+. Liepins teaches that deuterium substitution of various hypertensive agents provides increased efficacy and specifically mentions dihydropyridine compounds, see column 4, lines 41-50. Liepins teaches that the deuterated calcium channel blockers may contain various amounts of deuterium, see column 6, lines 4+.

Although Rampe fails to disclose deuterated compounds with all of the same deuterium-substituted positions encompassed by the instant claims, it would have been obvious to one of ordinary skill in the art to modify the compounds used in the methods disclosed by Rampe to include such deuterium substitution because Rampe teaches that various hydrogens may be substituted with deuterium to enhance efficacy of nifedipine, and because Funaki and Liepins teach that equivalent calcium blocking, antihypertensive compounds may be intentionally deuterium-substituted at various positions by specifically adding ^{2}H in an organic synthesis of the compound to impart increased efficacy and specificity. One of ordinary skill in the art would have been motivated to substitute deuterium at various positions of nifedipine, to impart increased efficacy and specificity by such deuterium substitution, as taught by Rampe, as well as, Funaki and Liepins.

Double Patenting

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 31 and 34 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 3 and 4 of prior U.S. Patent No. 5,846,514. This is a double patenting rejection.

The same compound and composition of claims 3 and 4 of the patent '514 patent are being claimed in claims 31 and 34. There is no seen difference. Note, the hydrogen atom of the ring nitrogen atom while shown in the instant claims is inherently present in the patented claims, as nitrogen is trivalent (and no charge is indicated), such H atoms are commonly not shown and because this hydrogen is present on nifedipine.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 29-30, 32, 33, and 35-44 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-10 of U.S. Patent No. 5,846,514. Although the conflicting claims are not identical, they are not patentably distinct from each other because both the pending claims and patented claims are drawn to compositions and methods comprising deuterium enriched nifedipine, wherein the patent claims are drawn to a subgenus which is clearly within the scope of the claimed genus. Also, the species' set forth in the patented claims are within the scope of the claimed formula, that is, the instant claims are anticipated by the compounds set forth in the patented claims. Also, the '514 patent clearly discloses that such deuterated compounds are for blocking calcium channels and treating hypertension.

Conclusion

No claims are allowed at this time.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael G. Hartley whose telephone number is (703) 308-4411. The examiner can normally be reached on M-F, 7:30-5, off alternative Mondays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman K. Page can be reached on (703) 308-2927. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-4556 for regular communications and (703) 308-4556 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1235.

Michael G. Hartley
Primary Examiner
Art Unit 1616

MH
July 29, 2003